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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,299	06/30/2003	James S. Dinh	884.919US1	3202

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EXAMINER

HAN, YOUNGHUIE JESSICA

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/612,299	DINH ET AL.	
	Examiner	Art Unit	
	Y. J. Han	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-21 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Rostron (6,559,562). Rostron discloses a converter comprising: a transformer circuit including an input port and an autotransformer (20) coupled to the input port, the input port to receive an input signal; a filter (46) coupled to the transformer circuit, the filter to generate an output signal at an output port (VL); and a controller (50) coupled to the transformer circuit and the filter, the controller to receive the output signal from the filter and to provide one or more control signals to the transformer circuit to control the output signal; autotransformer comprising two coils. See Fig. 2.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glennon (5,008,801) in view of Rostron (6,559,562).

Glennon discloses the invention substantially as claimed including a converter comprising: a transformer circuit including an input port (51a-51c) and an autotransformer (33) coupled to the input port, the input port to receive an input signal; a filter (34) coupled to the transformer circuit, the filter to generate an output signal at an output port (52a-52c); and a controller (60) coupled to the transformer circuit and the filter, the controller to receive the output signal from the filter and to provide one or more control signals to the transformer circuit to control the output signal; wherein the autotransformer comprises three coils (80a, 80b, 80c); wherein a diode (any of D1-D6) is connected between one of the three coils and a port other than the input port; wherein the filter (34) includes an inductor (inductor and capacitor are inherent in low-pass filter) coupled directly to the autotransformer; wherein the filter comprises a low-pass filter (reads on 34); wherein the controller comprises a synchronous buck controller (60); wherein the input signal has an input signal value and the output signal has an output signal value and the output signal value is less than the input signal value (the winding portions 86a-86c

are sized for approximately one-third of the output power rating). Further, various combinations of switches S1-S12 could be drawn to show an input port connected in series with any switch and an autotransformer, and a diode (D1-D6) connected in parallel with the switch and the autotransformer. The switches S1-S12 comprise insulated gate devices, such as IGBTs, MCTs or power FETs. Glennon, however, does not disclose explicitly that the controller receives the output signal from the filter. Rostron, on the other hand, discloses clearly a filter 46 coupled to the autotransformer 20 and a controller 50 wherein the controller receives the output signal from the filter (corresponding to the measured load voltage V_{load} as a control variable). See Fig. 2. Thus, it would have been obvious to one having ordinary skill in the art to employ the filter of Rostron in the converter of Glennon to obtain the claimed invention for the purpose of smoothing the output voltage. With respect to claim 12 which recites an input signal value of forty-eight volts and the output signal value of about six-tenths of a volt, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set input signal value at forty-eight volts and the output signal value at about six-tenths of a volt, since it has been held that discovering the optimum or workable ranges involves only routine skill in the art. Moreover, applicant has not disclosed that such input and output values solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any other input and output values.

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glennon as modified by Rostron and further in view of Cross (5,795,595).

Glennon as modified by Rostron discloses the invention substantially as claimed but does not disclose a second converter operated 180 degrees out of phase from the converter. Cross,

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however, clearly discloses two power converters coupled in parallel and are operated 180 degrees out of phase with one another. Therefore, it would have been obvious to one having ordinary skill in the art to employ second converter in Glennon as modified by Rostron, as taught by Cross, to obtain the claimed invention for the purpose of "highly efficient and compact, and is suitable for use under high power, high frequency conditions."

Response to Arguments

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

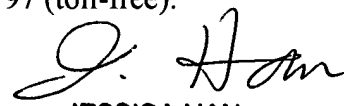
Allowable Subject Matter

7. Claims 15-21 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Y. J. Han whose telephone number is 571-272-2078. The examiner can normally be reached on Mon-Fri 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JESSICA HAN
PRIMARY EXAMINER